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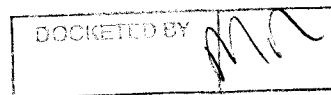
February 20, 2009

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Re: *Arizona Investment Council's Comments on Energy Efficiency in Response to Staff's Letter Dated January 30, 2009; Docket Nos. E-00000J-08-0314 and G-00000C-08-0314*

Dear Sir or Madam:

Enclosed are the original and 13 copies of the Comments of the Arizona Investment Council in response to Staff's letter of January 30, 2009 requesting information on various energy efficiency subjects.

Very truly yours,

GALLAGHER & KENNEDY, P.A.

By:

Michael M. Grant

MMG/plp
18762-1/2036381
Enclosures

cc (w/enclosures) (delivered): Commissioner Kristin K. Mayes, Chairman
Commissioner Gary Pierce
Commissioner Paul Newman
Commissioner Sandra D. Kennedy
Commissioner Bob Stump
Julie McNeely-Kirwan, Utilities Division

Original and 13 copies filed with Docket
Control this 20th day of February, 2009.

Comments of Arizona Investment Council on Energy Efficiency

Docket Nos. E-00000J-08-0314 and G-00000C-08-0314

The Arizona Investment Council ("AIC") submits these comments in response to Staff's letter of January 30, 2009 requesting information concerning various energy efficiency subjects. Most of the question areas in Staff's letter to the docket concern existing programs, new programs and other topics dealing with the general area of energy efficiency and demand side management, i.e., what studies exist on which programs are most effective, how can DSM efforts best be increased, etc. The AIC has no direct information on or experience with such subjects and will defer to the views of the utilities with extensive experience on these matters.

However, in relation to Staff's questions on Regulatory Elements and Incentives/Funding, the AIC strongly believes that one of the most effective steps the Commission can take to encourage and accelerate programs toward increased energy efficiency is to approve revenue decoupling in appropriate circumstances. Revenue decoupling removes the built-in disincentive for utilities to fund and promote conservation programs for their customers. For companies facing declining per-customer revenue due to conservation and energy efficiency programs, decoupling severs the link between volumetric sales and earnings.

AIC sponsored the testimony of Dr. Daniel Hansen in last year's Southwest Gas rate case. Dr. Hansen is one of the country's leading experts on the subject of revenue decoupling and he has previously consulted with and advised the Oregon and Utah Commissions on revenue decoupling programs in those states. For convenience, copies of his direct and rejoinder testimonies are attached to these comments.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

MIKE GLEASON, Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF
SOUTHWEST GAS CORPORATION FOR THE
ESTABLISHMENT OF JUST AND REASONABLE
RATES AND CHARGES DESIGNED TO REALIZE
A REASONABLE RATE OF RETURN ON THE
FAIR VALUE OF ITS PROPERTIES
THROUGHOUT ARIZONA.

DOCKET NO. G-01551A-07-0504

Direct Testimony of

Daniel G. Hansen, Ph.D.

on Behalf of

Arizona Investment Council

April 11, 2008

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1 **1. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

3 A. My name is Daniel G. Hansen. My business address is 4610 University Avenue,
4 Suite 700, Madison, Wisconsin 53705.
5

6 **Q. WHAT IS YOUR PROFESSION AND BACKGROUND?**

7 A. I am a Vice President at Laurits R. Christensen Associates, Inc. I received a Ph.D. in
8 Economics from Michigan State University in 1997, at which time I joined Laurits R.
9 Christensen Associates, Inc. I have worked primarily with the energy industry during my
10 11 years of consulting. In 2005, I conducted independent evaluations of Northwest
11 Natural Gas's decoupling and weather normalization mechanisms in Oregon, as required
12 by that Commission's Orders approving the mechanisms. Last year, I provided testimony
13 on behalf of the Utah Division of Public Utilities regarding Questar Gas Company's
14 decoupling mechanism. On behalf of Environment Northeast (a non-profit
15 environmental organization), I provided testimony regarding a decoupling mechanism
16 proposed by Connecticut Light & Power and also served on a panel before the
17 Massachusetts Department of Public Utilities to discuss the merits of decoupling
18 mechanisms (Docket 07-50). My resume is attached as AIC Exhibit No. __ (DGH-1).
19

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 A. The Arizona Investment Council ("AIC") has retained Christensen Associates Energy
22 Consulting, LLC, a subsidiary of Laurits R. Christensen Associates, Inc., to provide
23 testimony regarding the Revenue Decoupling Adjustment Provision ("RDAP") and the
24

1 Weather Normalization Adjustment Provision (“WNAP”) proposed by Southwest Gas
2 Corporation (“Southwest Gas” or “the Company”). The aspects of these mechanisms that
3 this testimony will address are:

- 4 • How RDAP addresses utility incentives to promote conservation and energy
5 efficiency without significantly altering the customer-level incentive to conserve;
- 6 • Other benefits associated with RDAP;
- 7 • How WNAP reduces risk for both the utility and its customers; and
- 8 • How a combination of RDAP and WNAP can be particularly effective.

9
10 **2. THE REVENUE DECOUPLING ADJUSTMENT PROVISION**

11 **Q. WHAT IS THE PURPOSE OF A DECOUPLING MECHANISM?**

12 A. Decoupling mechanisms are primarily intended to reduce or eliminate a utility’s
13 disincentive to promote conservation and energy efficiency. For this reason,
14 environmental organizations such as the Natural Resources Defense Council¹ and
15 Environment Northeast support decoupling. At the same time, decoupling mechanisms
16 reduce the variability of utility non-gas revenues. In the case of Southwest Gas’s
17 proposed RDAP, the Company would recover a fixed amount of non-gas revenues per
18 customer served.

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23

¹ “Joint Statement of the American Gas Association and the Natural Resources Defense Council”, July 2004.

1 Q. PLEASE DESCRIBE THE COMPANY'S DISINCENTIVE TO PROMOTE
2 CONSERVATION AND ENERGY EFFICIENCY THAT EXISTS UNDER ITS
3 CURRENT NON-GAS RATES.

4 A. The disincentive is created because traditional rate designs require the utility to recover
5 the majority of its non-gas costs, which are largely fixed costs, through volumetric rates.
6 A reduction in sales leads to a reduction in non-gas revenues, but does not lead to a
7 matching reduction in non-gas, i.e., primarily fixed, costs. Therefore, under its current
8 non-gas rates, the Company's realized rate of return is tied to sales levels. Lower sales
9 levels lead to a lower rate of return and higher sales levels lead to a higher rate of return.
10 This traditional design leads to a game of chance as to whether customer usage patterns
11 and weather patterns will actually allow the utility to recover its fixed costs, which do not
12 fluctuate with those weather or usage patterns.

13
14 Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED REVENUE DECOUPLING
15 ADJUSTMENT PROVISION.

16 A. The RDAP is a standard revenue per customer decoupling mechanism in which the
17 Company's allowed monthly non-gas revenues are equal to the number of customers in
18 the billing month multiplied by the allowed margin per customer in that month. The
19 *allowed* non-gas revenue is compared to the *actual* non-gas revenue billed and the
20 difference is entered into the RDAP Balancing Account ("RDAP BA"). An over-
21 recovery of non-gas revenue (i.e., when actual non-gas revenue exceeds allowed non-gas
22 revenue) produces a credit in the RDAP BA, reducing the non-gas rate in the following
23 year. An under-recovery of non-gas revenue (i.e., when actual non-gas revenue is less
24

1 than allowed non-gas revenue) produces a debit in the RDAP BA, increasing the non-gas
2 rate in the following year.

3
4 **Q. HOW DOES RDAP ADDRESS THE COMPANY'S DISINCENTIVE TO**
5 **PROMOTE CONSERVATION AND ENERGY EFFICIENCY?**

6 A. RDAP removes the link between the Company's sales and revenues. Under RDAP,
7 Southwest Gas recovers the level of revenue per customer approved for the RDAP tariff,
8 regardless of the level of sales per customer. Therefore, when RDAP is in place, the
9 Company's realized rate of return is not adversely affected by the success of conservation
10 or energy efficiency programs.

11
12 **Q. HAS THE REVENUE PER CUSTOMER RDAP DESIGN PROPOSED BY**
13 **SOUTHWEST GAS BEEN USED IN OTHER JURISDICTIONS?**

14 A. Yes, the revenue per customer design is the most common form of decoupling that I have
15 observed. The per-customer concept has been used by Vectren Energy in Indiana and
16 Ohio; Cascade Natural Gas in Washington and Oregon; Piedmont Natural Gas in North
17 Carolina; Baltimore Gas & Electric in Maryland; New Jersey Natural Gas; Washington
18 Gas in Maryland; South Jersey Gas; Questar Gas in Utah; and Northwest Natural Gas in
19 Oregon. Although there are differences between these decoupling mechanisms, they all
20 tie the level of non-gas revenues to the number of customers in the current month or year.

1 **Q. HOW DOES DECOUPLING AFFECT THE RATEPAYERS' INCENTIVE TO**
2 **ENGAGE IN CONSERVATION OR ENERGY EFFICIENCY?**

3 A. Decoupling has essentially no effect on an individual ratepayer's incentive to conserve
4 energy and may actually increase the customer-level incentive to conserve. To see this,
5 consider what happens to a residential customer's bill when they conserve energy with
6 and without decoupling. Suppose a G-5 customer would typically consume 35 therms in
7 January, but is assessing the benefits (under current rates) of reducing usage to 30 therms.
8 Whether decoupling is present or not, the reduction in usage would reduce the customer's
9 January non-gas bill by \$2.71 (= \$0.542 per therm x 5-therm reduction). With a
10 decoupling mechanism in place, the \$2.71 bill reduction goes into the RDAP BA to be
11 recovered in the following year. However, this \$2.71 will be paid by *all* G-5 customers
12 in the following year, so that the bills for the conserving customer will be essentially
13 unchanged by the presence of decoupling.

14
15 **Q. DOES THE EXAMPLE ABOVE STILL WORK IF MORE THAN ONE**
16 **RATEPAYER AT A TIME CONSERVES ENERGY?**

17 A. Yes. The only thing that a ratepayer can control is whether he or she engages in
18 conservation or energy efficiency activities. Because the "true-up" of non-gas revenue
19 through the decoupling mechanism is almost entirely paid by other ratepayers, the
20 individual-level incentive to conserve is not affected. If many or most of the ratepayers
21 also decide to conserve energy, decoupling could lead to an increase in rates in the
22 following year. However, that higher rate only *increases* the customer-level incentive to
23 engage in long-term conservation and energy efficiency activities.

1 Q. IT SEEMS COUNTER-INTUITIVE THAT DECOUPLING COULD INCREASE
2 THE CUSTOMER-LEVEL INCENTIVE TO CONSERVE. COULD YOU
3 PLEASE EXPLAIN THIS IN MORE DETAIL?

4 A. Yes. Consider an example in which a conservation program causes 20% of the customers
5 to reduce usage by 20% each, which would lead to a 4% decrease in total usage ($= 0.2 \times$
6 0.2). Assume that this leads to a reduction in non-gas revenue of 4% (it will actually be
7 less than that because some non-gas revenue comes from the fixed monthly charge). All
8 of the customers, including the 20% who conserve and the 80% who do not, will pay the
9 standard tariff rates in the current year. In the following year, the non-gas rate increases
10 by approximately 4% for all customers. This rate increase actually *increases* an
11 individual customer's incentive to conserve in the following year.

12 While it may seem counter-intuitive that decoupling increases the customer-level
13 incentive to conserve, consider the decision-making process for one customer. Suppose
14 that this customer knows that (1) the conservation program is in place, (2) it will likely
15 lead others to reduce their usage levels and (3) therefore the program will cause an
16 increase in the non-gas rate in the following year. The customer in this example will pay
17 the higher rate in the following year regardless of whether he or she chooses to conserve.
18 Therefore, the customer will evaluate the benefits of conserving energy by considering
19 the full non-gas rate in the current year and a higher non-gas rate in the following year
20 (due to the effects of the conservation program combined with the decoupling
21 mechanism). This *increases* the incentive (relative to current rates in the absence of
22 decoupling) to engage in long-term conservation activities, such as investing in a more
23 efficient furnace.

1 **Q. AIC IS INTERESTED IN IMPROVING THE ABILITY OF SOUTHWEST GAS**
2 **AND ALL ARIZONA UTILITIES TO RAISE CAPITAL AT REASONABLE**
3 **RATES TO MEET THE INFRASTRUCTURE NEEDS OF ARIZONA'S RAPID**
4 **GROWTH. DO REVENUE DECOUPLING MECHANISMS ASSIST IN THAT**
5 **GOAL AS WELL?**

6 A. Yes. Decoupling reduces the variability in a utility's non-gas revenues and ensures that a
7 fixed amount of non-gas revenue per customer is recovered as customers are added to the
8 system. By making the level of non-gas revenue more predictable over time, decoupling
9 is likely to improve an investor's view of Southwest Gas as an investment opportunity
10 and, therefore, improve the Company's ability to attract capital at a reasonable rate. As
11 Mr. Montgomery wrote in his direct testimony, the Company has not been able to earn its
12 authorized rate of return since the last rate case, which has been a consistent trend for a
13 decade or more. (Montgomery at p. 5.) In the absence of decoupling, the ongoing
14 problems that the Company has had in achieving its allowed rate of return may be
15 exacerbated by, among other things, the expansion of Demand-Side Management
16 programs and the prospect of a national carbon tax. This would further endanger
17 Southwest Gas's ability to compete for capital, which would be detrimental to the
18 interests of both the Company and its ratepayers, unless the RDAP is approved.

19
20 **Q. DOES DECOUPLING LEAD TO ANY OTHER POSITIVE OUTCOMES?**

21 A. Yes. By providing increased stability in non-gas revenues, decoupling will, in all
22 likelihood, reduce the frequency of rate cases. A reduction in the frequency of rate cases
23 reduces costs for the Company, its customers and the regulator.

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3. THE WEATHER NORMALIZATION ADJUSTMENT PROVISION

Q. WHAT IS THE PURPOSE OF A WEATHER NORMALIZATION MECHANISM?

A. Weather normalization mechanisms reduce the variability in non-gas revenue for the utility and reduce the variability of non-gas bills for ratepayers. Because of the use of natural gas for space heating, weather is a significant driver of fluctuations in natural gas usage from month-to-month and year-to-year. When non-gas costs are recovered through volumetric rates, weather fluctuations lead to significant variability in customer payments for, and utility receipt of, non-gas revenue. A weather adjustment mechanism adjusts non-gas revenue to reflect revenues that would have been collected under normal weather conditions.

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED WEATHER NORMALIZATION ADJUSTMENT PROVISION ("WNAP").

A. WNAP calculates customer-specific bill adjustments based on normal weather conditions, actual weather conditions and the customer's usage levels across months. It does so by first adjusting actual (metered) volumes to normal weather conditions. The volume adjustment is then used to calculate a bill adjustment, accounting for the effect of the block rates.

1 **Q. HOW ARE WEATHER CONDITIONS MEASURED?**

2 A. Weather conditions are measured in heating degree days ("HDDs"), which is calculated
3 for each day (and then summed up across days within a billing month). This variable is
4 intended to reflect the use of space heating appliances (none when the average
5 temperature is above 65 degrees and increasing linearly below 65 degrees).
6

7 **Q. HAS THE WNAP DESIGN BEEN USED IN OTHER JURISDICTIONS?**

8 A. Yes. Weather normalization mechanisms have been implemented for at least 41 utilities
9 in 20 different states.² Specifically, the WNAP design suggested by Southwest Gas is
10 identical to the Weather Normalization Adjustment used by Questar Gas in Utah.
11

12 **Q. WOULD YOU EXPECT THE WNAP TO BE EFFECTIVE IN REDUCING THE**
13 **VARIABILITY OF THE COMPANY'S NON-GAS REVENUES AND THE**
14 **RATEPAYER'S NON-GAS BILLS?**

15 A. Yes. When winter temperatures are below normal, natural gas consumption increases,
16 causing the Company to over-recover its non-gas revenues. This over-recovery comes at
17 the expense of the ratepayers, who receive higher than normal bills in colder than normal
18 months. The opposite outcome occurs in a winter month that is warmer than normal.
19 That is, in a warm winter month, the utility will under-recover its non-gas revenues,
20 while customers will pay bills that are lower than expected. WNAP reduces the
21 variability of non-gas bills and revenue by removing the effects of changes in weather
22

23 ² Daniel G. Hansen and Steven D. Braithwait, "A Review of the Weather Adjusted Rate Mechanism as Approved by
24 the Oregon Public Utility Commission for Northwest Natural," Oregon Public Utility Commission Docket UG-152,
October 2005, pp. 10-11.

1 conditions on customer usage levels, i.e., increasing non-gas revenue (and bills) in mild
2 winter months and decreasing non-gas revenue (and bills) in cold winter months.

3
4 **Q. WHY ARE THE ADJUSTMENTS MADE USING CUSTOMER-SPECIFIC**
5 **DATA?**

6 A. Because some customers are more weather sensitive than others. For example, a
7 customer who only uses natural gas for cooking will not tend to change usage levels in
8 response to changes in weather conditions. WNAP accounts for the differences across
9 customers by calculating customer-specific bill adjustments based on each customer's
10 usage levels in winter and summer months, using billing data from the summer months to
11 determine the amount of usage that is not weather-sensitive.

12
13 **Q. DOES WNAP SHIFT RISK FROM THE COMPANY TO ITS RATEPAYERS?**

14 A. No. Both the Company and its ratepayers are exposed to risk caused by fluctuating
15 weather conditions. Because a specific weather outcome (e.g., a cold winter month)
16 benefits one party at the expense of the other, the weather risk can be offset for both of
17 the parties through a weather adjustment mechanism. WNAP will reduce the variability
18 of the non-gas portion of the bill for customers and reduce the variability of non-gas
19 revenues for the Company.

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1 Q. PLEASE DESCRIBE HOW WNAP IS IMPROVED BY THE PRESENCE OF
2 RDAP.

3 A. A key issue when establishing a weather adjustment mechanism is in defining normal
4 weather conditions. For example, if the level of "normal" heating degree days is set too
5 high, the weather adjustment mechanism will consistently work as though the winter is
6 milder than average, leading to customer surcharges on average. However, if RDAP is
7 present in addition to WNAP, the decoupling deferrals will correct any errors that occur
8 because of an incorrect definition of normal weather. Continuing this example in which
9 "normal" heating degree days are set too high and the WNAP will over-charge customers
10 on average, the increase in non-gas revenues due to the WNAP bill adjustments is
11 completely offset by the matching customer refund that is created in the RDAP BA.

12 It is difficult to determine the timeframe that should be used to define normal
13 weather conditions (e.g., the previous 10, 20 or 30 years) and reasonable people can
14 disagree on the issue. The fact that RDAP automatically adjusts non-gas revenues to
15 account for any errors that may exist in the definition of normal weather used in WNAP
16 is, therefore, a convenient and desirable attribute that effectively eliminates the need to
17 debate the definition of normal weather conditions.

18
19 5. RECOMMENDATIONS

20 Q. WHAT ARE YOUR RECOMMENDATIONS REGARDING RDAP AND WNAP?

21 A. I recommend that the Commission approve both RDAP and WNAP. RDAP removes a
22 disincentive that Southwest Gas faces in supporting conservation and energy efficiency
23 programs. Importantly, it does so in a way that does not reduce the customer-level

1 incentives to engage in conservation and energy efficiency activities. Also, decoupling
2 will likely reduce the frequency of rate cases by providing an automatic adjustment to
3 allowed revenues based on the observed change in the number of customers served and
4 by reducing the financial effects associated with changes in customer usage levels over
5 time. In addition, by improving the stability of non-gas revenues, decoupling will, all
6 else equal, improve Southwest Gas's ability to obtain capital at reasonable rates.

7 WNAP is appropriate because it reduces weather-induced risk for both the
8 Company and its ratepayers. It accounts for the fact that customers differ in their weather
9 sensitivity and provides customers with immediate bill relief in colder-than-normal
10 winter months.

11 WNAP and RDAP function particularly well in combination. That is, WNAP
12 reduces the size of RDAP deferrals (reducing the size of the annual rate changes due to
13 RDAP), while RDAP eliminates the potential for errors in WNAP bill adjustments due to
14 an incorrect normal weather definition that could otherwise skew WNAP payments
15 toward either the Company or its ratepayers.

16
17 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

18 **A.** Yes.

19
20 18762-6/1807516

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

MIKE GLEASON, Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF
SOUTHWEST GAS CORPORATION FOR THE
ESTABLISHMENT OF JUST AND REASONABLE
RATES AND CHARGES DESIGNED TO REALIZE
A REASONABLE RATE OF RETURN ON THE
FAIR VALUE OF ITS PROPERTIES
THROUGHOUT ARIZONA.

DOCKET NO. G-01551A-07-0504

Rejoinder Testimony of

Daniel G. Hansen, Ph.D.

on Behalf of

Arizona Investment Council

June 9, 2008

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1. **INTRODUCTION**

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Daniel G. Hansen. My business address is 4610 University Avenue,
Suite 700, Madison, Wisconsin 53705.

**Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS DOCKET ON
APRIL 11, 2008?**

A. Yes, I did.

Q. WHAT IS THE PURPOSE OF THIS REJOINDER TESTIMONY?

A. Its primary purpose is to respond to the arguments raised in opposition to the Revenue
Decoupling Adjustment Provision ("RDAP") and the Weather Normalization Adjustment
Provision ("WNAP") (1) in the direct testimony of RUCO witness Mr. Rigsby, as well as
the surrebuttal testimony of Ms. Diaz Cortez which adopts Mr. Rigsby's direct testimony
and (2) in the direct testimony of Mr. Radigan filed March 28, 2008 and his surrebuttal
testimony. I will also summarize the key reasons why the RDAP and WNAP should be
approved by this Commission and provide the Commission information on revenue
decoupling pilot programs I evaluated that were instituted and are still in effect in the
states of Utah and Oregon.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. Section 2 reviews the reasons that RDAP and WNAP should be approved; Section 3
provides support for the pilot programs proposed by Southwest Gas Company

1 (“Southwest Gas” or “the Company”); Section 4 responds to arguments by Mr. Radigan,
2 Mr. Rigsby, and Ms. Diaz Cortez; and Section 5 provides my recommendations.

3
4 **2. KEY REASONS WHY RDAP AND WNAP SHOULD BE APPROVED**

5 **Q. WHAT ARE THE BENEFITS OF RDAP?**

6 A. As explained in my direct testimony, RDAP has the following key benefits:

- 7 1. RDAP eliminates the Company’s disincentive to support conservation and
8 energy efficiency due to regulatory lag (pp. 3-4);
9 2. RDAP preserves, and potentially increases, the customer-level incentive to
10 conserve that exists in standard rates (pp. 5-6);
11 3. RDAP improves the Company’s ability to attract capital at reasonable rates by
12 providing improved stability in revenues (p. 7); and
13 4. RDAP may reduce the frequency of rate cases (p. 7).

14
15 **Q. WHAT ARE THE BENEFITS OF WNAP?**

16 A. As I discussed at pages 8-10 of my direct testimony, WNAP reduces weather risk for
17 both the Company and its ratepayers. This is possible, because when weather makes one
18 party better off, the other party is worse off. Therefore, because WNAP reduces the
19 weather-induced variability of Company revenues, it also reduces the weather-induced
20 variability of customer bills. Because WNAP includes ratepayer-specific bill adjustments
21 and affects bills in the current month, it is effective in reducing weather risk for
22 individual ratepayers. I will discuss this issue further in my response to the Staff and
23 RUCO testimony.

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Q. DO RDAP AND WNAP WORK WELL IN COMBINATION?

A. Yes. As I discussed at pages 11-12 of my direct testimony, RDAP and WNAP work particularly well together. WNAP helps to reduce the size of the RDAP deferrals, which improves rate stability over time. RDAP eliminates concern regarding the definition of normal weather used in WNAP, so that weather adjustments will not be skewed toward either the Company or its ratepayers over time.

3. PILOT PROGRAM PROPOSAL

Q. AT PAGES 23-25 OF HIS REBUTTAL TESTIMONY, MR. CONGDON SUGGESTS THAT THE COMMISSION AUTHORIZE RDAP AND WNAP ON A PILOT BASIS. MR. SCHLEGEL SUPPORTS THAT CONCEPT IN HIS SURREBUTTAL TESTIMONY. DO YOU HAVE EXPERIENCE WITH SUCH PILOT PROGRAMS IN OTHER STATES?

A. Yes, I provided evaluations of both revenue decoupling and weather adjustment pilot programs in Oregon and provided testimony on behalf of the Utah Division of Public Utilities regarding a revenue decoupling mechanism in that state.

Q. PLEASE DESCRIBE THE OREGON DECOUPLING PILOT PROGRAM.

A. In Order No. 02-634, the Oregon Public Utility Commission approved a three-year decoupling pilot program for Northwest Natural Gas beginning on October 1, 2002. The Order also required an independent review by March 21, 2005 to determine whether the

1 mechanism should be continued beyond its initial termination date of September 30,
2 2005. Dr. Steven Braithwait and I conducted the independent review.

3 The review was quite extensive and included assessments of the effect of
4 decoupling on:

- 5 • Utility and ratepayer incentives;
- 6 • Utility and ratepayer risk;
- 7 • Utility financial outcomes;
- 8 • Utility behavior, including marketing efforts, energy efficiency program
9 performance, an analysis of new customer connections and corporate
10 culture and organization;
- 11 • Service quality;
- 12 • Connections practices; and
- 13 • Utility finances (e.g., bond ratings).

14 In addition, we interviewed other interested parties to obtain their views on the
15 mechanism and its effect on the utility's behavior. At the conclusion of the review, we
16 recommended the continued use of decoupling.

17 The Oregon Commission accepted our recommendation and extended the pilot an
18 additional four years. The decoupling pilot was recently extended again and is currently
19 set to expire on October 31, 2012.

1 **Q. PLEASE DESCRIBE THE OREGON WEATHER ADJUSTMENT MECHANISM**
2 **PILOT PROGRAM.**

3 A. In Order No. 03-057, the Oregon Public Utility Commission approved a five-year
4 weather adjustment mechanism ("WARM") pilot program for Northwest Natural Gas
5 beginning on September 1, 2003. The Order required "a report on the functioning of
6 WARM, including any proposed refinements to the program"¹ by September 30, 2005.
7 Dr. Steven Braithwait and I also prepared that report.

8 The review included:

- 9 • An assessment of the effect of WARM on utility and ratepayer incentives;
- 10 • An assessment of the effect of WARM on utility and ratepayer risk;
- 11 • A review of weather normalization programs used in the United States;
- 12 • Analyses and simulations of program outcomes; and
- 13 • An examination of service quality issues.

14 The report recommended the continued use of a weather adjustment mechanism. The
15 pilot program was recently extended to October 31, 2012. This date was selected so that
16 the pilot program periods for the decoupling and weather adjustment mechanisms would
17 match, allowing for a future joint examination of the programs.

18
19 **Q. PLEASE DESCRIBE THE UTAH DECOUPLING PILOT PROGRAM.**

20 A. The Public Service Commission of Utah approved a three-year decoupling pilot program
21 (called the Conservation Enabling Tariff, or "CET") for Questar Gas Company to begin
22

23

¹ Page 3, Appendix C to Oregon Public Utility Commission Order No. 03-507.

1 on November 1, 2006. The Order required a one-year review of the program to provide
2 parties with the opportunity to recommend modifications to, or the termination of, the
3 decoupling mechanism. I provided testimony on behalf of the Utah Division of Public
4 Utilities and recommended the continuation of the pilot program.

5 The Commission agreed: "We view the remaining two years of the Pilot Period
6 as an opportunity to gain more experience and gather more information by which we may
7 evaluate the benefits and detriments of the CET."²
8

9 **Q. DO YOU RECOMMEND THE USE OF THE PILOT PROGRAM MODEL FOR**
10 **SOUTHWEST GAS?**

11 A. Yes. Pilot programs provide regulators and other parties the opportunity to observe how
12 a mechanism functions without the risk of incurring any long-term adverse effects they
13 suspect might come to pass. In addition, they provide the opportunity to fine tune the
14 mechanism in response to real-world experience. While I believe that RDAP and WNAP
15 are well-designed programs that will outlive a pilot program period, the use of a pilot
16 may provide information that allows for the mechanisms to be improved.
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² November 5, 2007 Order in Docket No. 05-057-T01, p. 13.
24

1 **4. RESPONSE TO MR. RADIGAN, MR. RIGSBY AND MS. DIAZ CORTEZ**

2 **Q. BOTH THE RUCO AND STAFF WITNESSES STATE THAT WNAP SHIFTS**
3 **WEATHER RISK FROM SHAREHOLDERS TO RATEPAYERS.³ DO YOU**
4 **AGREE?**

5 A. No. They make this claim repeatedly and without any support or justification. It seems
6 to be based on a view that risk is a zero sum game, so that if risk is reduced for one party,
7 it must be increased for another. A simple example shows that this is not the case.

8 Suppose that weather in a winter month can only be one of two things: mild, in
9 which case the customer pays \$20 in non-gas costs; or cold, in which case the customer
10 pays \$30 in non-gas costs. In this example, the allowed non-gas revenue is \$25. In a
11 mild winter month, the utility undercollects by \$5 ($= \$20 - \25), while the customer
12 underpays by \$5. In a cold winter month, the utility overcollects by \$5 ($= \$25 - \20),
13 while the customer overpays by \$5.

14 It would be easy to design WNAP if the world worked this way. In a mild winter
15 month, the customer's non-gas bill is increased by \$5, and in a cold winter month the
16 customer's non-gas bill is decreased by \$5. After the "WNAP" adjustment is made, the
17 utility collects \$25 and the customer pays \$25 no matter what happens with the weather.

18 Prior to the adjustment, both the utility and the customer faced weather risk.
19 After the adjustment, neither the utility nor the customer face weather risk. This
20 demonstrates that a weather adjustment mechanism reduces risk for both the utility and
21 the ratepayers.

23

24 ³ Rigsby Direct, p. 7; Diaz Cortez Surrebuttal, p. 9; and Radigan Surrebuttal, pp.4 and 10.

1 **Q. THAT WAS A VERY SIMPLE EXAMPLE. DOES IT ACTUALLY**
2 **DEMONSTRATE HOW WNAP WOULD WORK?**

3 A. Yes, the example contains all of the basic features of volumetric non-gas rates and
4 WNAP: weather conditions that make one party better off make the other party worse off
5 and a mechanism that makes customer-specific adjustments to the non-gas portion of the
6 bill. The details of WNAP are more complicated because of the need to accommodate a
7 broader range of weather conditions and customers.

8 WNAP reduces weather risk for both the Company and its ratepayers. The
9 Company will experience reduced variability of non-gas revenues and customers will
10 experience reduced variability in the non-gas portion of their bills. Another customer
11 advantage is the WNAP adjustments affect the *current* bill, so that relief from the effects
12 of a cold winter month are provided immediately. Also, the WNAP adjustments are
13 based on customer-specific data, so that the size of the adjustment is appropriate given
14 each customer's weather sensitivity.

15
16 **Q. MS. DIAZ CORTEZ CLAIMS THAT UNDER RDAP "THE PRICE MESSAGE**
17 **AS IT RELATES TO INCENTING CONSERVATION IS DILUTED SO THAT**
18 **THE CUSTOMER WILL NOT SEE AS COMPELLING OF A CONSERVATION**
19 **PRICE MESSAGE UNDER THE PROPOSED RDAP AS THEY OTHERWISE**
20 **WOULD ABSENT THE RDAP."**⁴ **DO YOU AGREE?**

21 A. No. Ms. Diaz Cortez appears to be confusing the effect of RDAP on *all* customers with
22 the effect of RDAP on the incentives for *any one* customer. That is, when customers

23
24 ⁴ Diaz Cortez Surrebuttal, p. 6.

1 conserve under RDAP, the applicable customer group as a whole will “repay” the
2 Company for the associated reduction in non-gas revenue. Therefore, it may appear that
3 RDAP reduces the customers’ incentive to engage in conservation by the amount of the
4 non-gas rate.

5 However, that’s not the case. Any *one* customer who conserves energy promptly
6 receives the full reduction and corresponding conservation signal in non-gas revenue on
7 his or her current bill. It’s only in the next year that customer “repays” an imperceptibly
8 small portion of it through the RDAP deferral. This means that the customer-level
9 incentive to conserve is essentially unchanged by the presence of RDAP.

10
11 **Q. HAVE OTHER GROUPS RECOGNIZED THAT DECOUPLING DOES NOT**
12 **SIGNIFICANTLY ALTER THE CUSTOMER-LEVEL INCENTIVE TO**
13 **CONSERVE?**

14 A. Yes. The Natural Resources Defense Council (“NRDC”) supports using decoupling to
15 sever the link between sales and revenues, but does not support the use of high fixed
16 charges. In their article, “Breaking the Consumption Habit”, which appeared in The
17 Electricity Journal in December 2001, the NRDC concludes that high fixed charges
18 should not be used as a substitute for decoupling because “We should not make a bad
19 situation worse by reducing customers’ rewards for using less electricity, which is
20 precisely what would happen if we raised their fixed charges and cut their usage-based
21 distribution charges by a corresponding amount.” While this article was written from the
22 electricity perspective, the same argument applies to the natural gas industry. That’s
23 evidenced by the NRDC’s support for natural gas decoupling mechanisms in their joint

1 statement with the AGA. (This joint statement has been included as Exhibit A to
2 Mr. Miller's direct testimony.)
3

4 **Q. CAN RDAP *INCREASE* THE CUSTOMER-LEVEL INCENTIVE TO**
5 **CONSERVE?**

6 A. Yes. For example, suppose that a customer anticipates that other customers will
7 conserve—perhaps because of the introduction of a new DSM program. Based on this,
8 the customer expects a rate increase in the following year through the RDAP deferral.
9 The expectation of the higher rate will increase the benefits the customer perceives in
10 engaging in conservation and energy efficiency. That example is described in greater
11 detail on page 6 of my direct testimony.
12

13 **Q. IS IT FAIR FOR RDAP TO REQUIRE THE CUSTOMER GROUP AS A WHOLE**
14 **TO PAY FOR THE REDUCTIONS IN NON-GAS REVENUES FROM**
15 **CONSERVING CUSTOMERS?**

16 A. I believe that it is. For example, it is no different from the use of regulatory surcharges
17 collected from all customers to fund DSM programs. Like RDAP deferrals, these rates
18 are paid by all ratepayers, but the direct benefits of the DSM programs are limited to
19 participating customers. However, there are indirect benefits—potentially associated
20 with environmental improvements or reductions in commodity costs—that are shared
21 with all customers.
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1 Q. MS. DIAZ CORTEZ TESTIFIED THAT "THE RDAP WOULD ONLY ADJUST
2 BILLING DETERMINANTS FOR THERMS LOST TO CONSERVATION AND
3 IGNORE ANY GAINS IN BILLING DETERMINANTS DUE TO GROWTH."⁵
4 DO YOU AGREE?

5 A. No. This statement indicates that Ms. Diaz Cortez may not understand how RDAP
6 works. First, RDAP does not "adjust billing determinants." Rather, it causes revenue to
7 be added to or subtracted from a deferral account because of differences between allowed
8 and actual use per customer. The total deferrals for the year—positive or negative—are
9 then converted into a rate adjustment for the following year.

10 Second, RDAP does not adjust only for "therms lost to conservation." RDAP will
11 add to or subtract from the deferral account whenever there is a difference between
12 allowed and actual use per customer, regardless of the cause of that difference.

13 Third, RDAP will not "ignore any gains in billing determinants due to growth" if
14 the growth is associated with increases in use per customer. It is true that RDAP will not
15 create a deferral when average-sized customers are added to the system. That is, if
16 customers are added, but use per customer does not change, the RDAP won't do
17 anything. This allows the Company to recover additional non-gas revenue to cover costs
18 associated with serving the added customers, which also occurs under standard rates.
19 Alternatively, if *existing* customers increase usage relative to the approved levels, RDAP
20 will cause rates to go down in the following year.

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⁵ Diaz Cortez Surrebuttal, p. 4.

1 Her misconceptions regarding how RDAP works appear to be the source of her
2 view that RDAP "truly is biased."⁶ In fact, RDAP rate adjustments can lead to either rate
3 increases or rate decreases. However, if RDAP is successful in increasing the level of
4 conservation and energy efficiency, the deferrals will tend to lead to rate increases. I
5 don't believe that such rate increases should be viewed as a bias, because, as I've pointed
6 out, customers would also benefit from the increased conservation and energy efficiency
7 activity.

8
9 **Q. TO SUPPORT HIS ARGUMENTS AGAINST RDAP, MR. RADIGAN CITED**
10 **THE MAINE EXPERIENCE WITH DECOUPLING, AS DESCRIBED IN A**
11 **NARUC DECOUPLING FAQ DOCUMENT.⁷ DID HE OMIT ANY RELEVANT**
12 **INFORMATION FROM THAT DOCUMENT?**

13 **A.** Yes. NARUC included a box on page 8 of the FAQ document that describes Maine's
14 decoupling experience. Not included in Mr. Radigan's reference was this important
15 conclusion:

16 It should be noted that while decoupling is often cited as the culprit
17 here, in fact the economic downturn was the problem. Traditional
18 regulation would have eventually yielded rate changes through a
19 traditional rate case and the resulting price increases would have
20 reflected the same economic circumstances. (Emphasis added.)

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22
23 ⁶ Ibid., p. 5.

24 ⁷ Radigan Direct, pp. 8-9.

1 As the quote indicates, NARUC does not believe that Maine's experience with
2 decoupling revealed any fundamental problem with the mechanism itself.

3
4 **Q. MR. RADIGAN ARGUES THAT "THERE HAS BEEN NO SHOWING IN THIS**
5 **CASE THAT A LACK OF REVENUE DECOUPLING IS A MAJOR OBSTACLE**
6 **TO ENERGY EFFICIENCY."**⁸ **DO YOU HAVE ANY SUCH EVIDENCE TO**
7 **GIVE THE COMMISSION?**

8 **A.** Yes. The Order associated with the Questar Gas Company ("QGC") decoupling
9 proceeding contained the following summary of the views of Utah Clean Energy and
10 Southwest Energy Efficiency Project ("UCE/SWEEP"):

11 UCE/SWEEP argue removing financial disincentives and aligning
12 the interests of the utility with that of the consumer are critical for
13 advancing natural gas energy efficiency. In UCE/SWEEP's view,
14 since the CET (the decoupling mechanism) has removed such
15 disincentives, Questar has undergone a transformation in its
16 interest and actions with respect to DSM. In addition, to date,
17 UCE/SWEEP claim the CET has not adversely affected rates and
18 QGC has moved from having no DSM programs to aggressively
19 implementing DSM.⁹ (Parenthetical comment added.)

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23 ⁸ Radigan Surrebuttal, p. 9.

24 ⁹ Public Service Commission of Utah Order for Docket No. 05-057-T01, p. 9.

1 The findings of the Commission supported this view: "All parties express satisfaction
2 with Questar Gas's initial effort to begin offering customer energy efficiency programs
3 and we concur the effort is a positive change from prior inaction."¹⁰

4 In addition, as part of my independent evaluation of decoupling in Oregon, I
5 interviewed a number of interested third parties to obtain their views regarding the
6 utility's performance under decoupling. These included Ralph Cavanagh of the NRDC;
7 Margie Harris, Executive Director for the Energy Trust of Oregon (which administers the
8 majority of the DSM programs in Oregon); and Bob Jenks, Executive Director of the
9 Citizens' Utility Board. The report summarized these interviews as follows:¹¹

10 The input that we received from these individuals consistently
11 indicated that NW Natural is sincere in its commitment to promote
12 conservation efforts, specifically in the form of high-efficiency
13 furnaces... Taken together, we believe that the views expressed to
14 us indicate that NW Natural takes its commitment to promoting
15 energy efficiency seriously.

16 The experience to date in both Oregon and Utah provides two examples in which
17 the utilities' efforts in pursuing conservation and energy efficiency have been positively
18 influenced by the introduction of decoupling.

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¹⁰ *Ibid.*, p. 10.

23 ¹¹ "A Review of Distribution Margin Normalization as Approved by the Oregon Public Utility Commission for
24 Northwest Natural", March 2005, pp. 47-48.

1 **Q. IS IT REASONABLE TO APPLY THE EXPERIENCE IN OREGON AND UTAH**
2 **TO SOUTHWEST GAS?**

3 A. Yes. All three of the utilities face (or faced) the same disincentive to promote
4 conservation and energy efficiency in the absence of decoupling. Specifically, because
5 fixed non-gas costs are recovered through volumetric rates, each utility is (or was) made
6 worse off when customers conserve energy. Decoupling removes this disincentive by
7 breaking the link between usage and non-gas revenues.

8
9 **Q. MR. RADIGAN QUESTIONS WHETHER USE PER CUSTOMER WILL**
10 **CONTINUE TO DECLINE.¹² DO YOU HAVE AN OPINION ON THIS ISSUE?**

11 A. I find Mr. Radigan's views on this matter to be contradictory. On the one hand, he
12 questions whether use per customer will continue to decline. On the other hand, he
13 argues that RDAP is unfair because "ratepayers generally don't like clauses that are
14 designed to automatically increase their bills."¹³ However, RDAP will only *increase*
15 customer bills *if use per customer continues to go down*. In fact, if use per customer were
16 to reverse its historical pattern and instead increases, RDAP will automatically *reduce*
17 ratepayers' bills.

18 RDAP produces balanced results. RDAP mitigates the financial losses associated
19 with further reductions in use per customer that may occur. If those reductions do not
20 occur, Mr. Radigan should have no problem with the fact that RDAP will not lead to rate
21 increases.

22
23 ¹² Radigan Surrebuttal, p. 7.

24 ¹³ Radigan Direct, p. 5.

1 Therefore, I don't believe that the approval of RDAP should be based on whether
2 one expects use per customer to continue to decline (in the absence of increased
3 conservation and energy efficiency efforts induced by decoupling). The utility's
4 disincentive to support conservation and energy efficiency is removed by RDAP
5 regardless of what happens to use per customer.
6

7 **Q. MR. RADIGAN ALSO QUESTIONS WHETHER RDAP WILL REDUCE THE**
8 **FREQUENCY OF RATE CASES.¹⁴ DO YOU HAVE AN OPINION ON THIS**
9 **ISSUE?**

10 **A.** Yes. As stated in my direct testimony, I believe that RDAP will, all else equal, reduce
11 the frequency of rate cases. I am not alone in this view. Attachment 3 to Mr. Rigsby's
12 direct testimony contains a presentation on decoupling by Dr. Dismukes of LSU. Slide 2
13 of this presentation lists the arguments in favor of revenue decoupling, which include
14 "Reduces regulatory costs and the need for frequent rate cases." Correspondingly,
15 slide 17 of his presentation lists some alternatives to revenue decoupling. The last
16 alternative stated is "More frequent rate cases: traditional approach at correcting rates
17 that get out of balance." Obviously, Dr. Dismukes expects that decoupling will tend to
18 reduce the frequency of rate cases. Having opposed Dr. Dismukes in the Questar Gas
19 Utah proceeding, I can tell you that he does not support decoupling. While he and I
20 disagree on many issues regarding decoupling, we do agree on the effect decoupling will
21 have on the frequency of rate cases.
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24 ¹⁴ Radigan Direct, p. 5.

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1 Q. DOES THIS COMPLETE YOUR REJOINDER TESTIMONY?

2 A. Yes.

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